at that time. Its extreme dates as far as now known are 1st May until 12th October.

Icterus cayanensis, Epaulet Oriole: There are only a few records. On 8th October 1967 I collected a male (weight 42 g) at Phedra.

Euphonia plumbea, Plumbeous Euphonia: This species is certainly not so rare as is generally supposed. I collected two more specimens at Phedra on 6th and 13th August 1967. They were feeding in the company of several *E. violacea* and *E. minuta* on berries in low shrubbery. I have now collected seven specimens in Surinam. Weights of four males 9 – 9·5 (9.2) g, of three females 8 – 9 (8·5) g.

Euphonia chrysopasta, Golden-bellied Euphonia: Certainly not rare, as I collected five more specimens at Phedra: two males and two females on 18th February 1968 and a male on 23rd November 1969. They were feeding on berries in low shrubbery in the company of *E. violacea* and *E. minuta*. A critical examination of this series with the type of *nitida* described from only a single specimen from Surinam by Penard (1923) would be valuable. I have now collected nine specimens in Surinam; weights of six males 11·1 – 13·3 (12·1) g, of three females 12 – 12·7 (12·3) g.

Tachyphonus phoenicius, Red-shouldered Tanager: On 3rd December 1967 I found a nest with two eggs on the ground at the foot of a low bush in savanna near Zanderij, in the same situation as described in my book. Measurements of eggs 22·3 × 16·4, 22·9 × 16·6 mm. Both weighed 3·2 g.

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[The cost of reproduction of the plate in the above paper is to be borne by the author—Ed.]

Generic limits in old world Apodidae and Hirundinidae

by R. K. Brooke

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The Apodidae and the Hirundinidae are the principal avian diurnal predators of aerial plankton. The present paper sets out how they should be classified at the generic level and examines certain proposals in this light.

Sharpe & Wyatt (1894: xii) said "The swallows are represented by twelve genera, which might almost be characterized by the peculiarities of their nesting habits". Mayr & Bond (1943) drew attention to the importance of correlating colour patterns and nest types in the Hirundinidae, Medway (1966) similarly correlated colour patterns and the ability to echo locate in the Collocaliini (Apodidae). Lack (1956b) brought in clutch size as well in the Apodidae. Orr (1963) in discussing parts of the Apodidae emphasized that

such ecological specialists were restricted in their possibilities for morphological change consonant with retaining their ecological functions and that therefore small differences were of greater importance in considering genera and species than in more plastic groups. Orr's (*op. cit.*) remarks apply equally to the Hirundinidae.

Brooke (1970) tried to apply these principles in his revision of the Apodidae. Therein he recognized *Tachymarptis* Roberts 1922 as a subgenus of *Apus* Scopoli 1777 and included in it *melba* L., the type species, and *aequatorialis* von Müller since he agreed with Lack (1956a) that they were closely related. On *Tachymarptis* he wrote that it:—

> "is characterized by its absolutely greater size, e.g., culmen 12 – 14 mm. as opposed to 5 – 10 mm. in *Apus*, weight over 80 gm. as opposed to less than 60 gm. in *Apus*, which indicates that *Tachymarptis* exploits a different ecological niche from that of *Apus*. In addition, the nest is usually placed in a vertical crack, not on or under a pre-existing ledge".

Brooke (1964) showed that newly hatched nestlings of *Apus apus*, *A. caffer* and *A. affinis* were hatched with zygodactylous feet and that this condition lasts for the best part of the first week of life. I recently examined two naked, blind nestlings, probably three and five days old of *Tachymarptis aequatorialis*. The foot was completely pamprodactyl with no trace of the zygodactyl condition found in *Apus* species of this age. The difference in foot formula at so early a stage in development strongly suggests a deep seated difference in the genetic systems of the two groups. As for *T. melba*, Zehnter (1890) pointed out long ago that the twelve day old embryo had a pamprodactyl foot.

It is widely accepted that Mallophaga or Phtheiraptera sometimes give a measure of evolutionary relationship. Ledger (1971) has shown that the Mallophagan *Dennyus hirundinis* (L. 1761) is widespread in *Apus* sensu stricto having examined material collected on *A. apus*, *affinis*, *nipalensis* (if this is to be regarded as specifically distinct from *affinis* as suggested in Brooke 1971), *caffer*, *horus*, *bradfieldi*, *barbatus*, *pallidus*, *alexandri*, *acuticauda* and *pacificus*. He points out that *D. cypsiurus* Thomson 1948 found on both *Cypsiurus parvus* and *batasiensis* is closely related morphologically to *D. hirundinis* but that *D. vonarxi* Büttiker 1954 from *T. melba* and *D. aequatorialis* Ledger 1968 from *T. aequatorialis* are morphologically closely related to each other but not to *D. hirundinis* and *D. cypsiurus*. He believes that *Tachymarptis* and *Apus* stocks separated before *Apus* and *Cypsiurus* stocks did. This may well be so. In any case it argues strongly for recognizing *Tachymariptis* Roberts 1922 as a full genus in the Apodini of the Apodidae and I propose accordingly.

Schoutedenapus De Roo 1968 is of uncertain position in the Apodidae (Brooke 1970). Ledger (1971) points out that the one known *Dennyus* Neumann 1906 from it is a member of the subgenus *Ctenodennyus* Ewing 1930 also found on *Nephoecetes niger* and some Collocaliini. This does not assist the placing of *Schoutedenapus* which Brooke (1970) suggested had affinities with both the Cypseloidinae in which is placed *Nephoecetes* Baird 1858 and the Collocaliini.

Brooke (1970) recognized three subgenera in *Collocalia* Gray 1840 (*Collocalia* for the glossy species who cannot echo locate, *Aerodramus* Oberholser 1906 for the dull species who echo locate and *Hydrochous* Brooke 1970 for the large, dull *gigas* which cannot echo locate. He also pointed out that *gigas* is absolutely larger than any other member of the Collacaliini and that it alone among all the many fork-tailed swifts has more emarginate outer rectrices in

juveniles than in adults. Since then Becking (1971) has shown that the nest of *gigas* contains saliva which does not bind the material because it is kept constantly wet by the spray from the adjacent waterfall but it does solidify and bind the material when a nest is collected and stored in a dry place. So *gigas* is not an old world representative of the Cypseloidinae who lack binding saliva. Ledger (1970) has provided a preliminary discussion of the *Dennyus* Neumann 1906 which parasitize the Collocaliini. He erected a subgenus *Collodennyus* for the majority, a subgenus only known from the Collocaliini. *D.* (*C.*) *medwayi* Ledger 1970 is the parasite of *gigas* and is a member of the *distinctus* group found on *Collocalia* sensu stricto. He therefore supports the second suggestion of Medway & Wells (1969) that *gigas* comes from a non-echo locating stock and has subsequently lost the glossy plumage of its relatives. In view of the differences set out above I propose that *Hydrochous* Brooke 1970 be regarded as a full genus containing only the type species *gigas* Hartert & Butler 1901. The corollary is to give full generic rank to *Aerodramus* Oberholser 1906 containing as its type *brevirostris* Horsfield 1839 and also *spodiopygia*, *francica*, *elaphra*, *unicolor*, *vanikorensis*, *inquieta*, *salangana*, *hirundinacea*, *leucophaea*, *fuciphaga*, *maxima* and *papuensis*. *Collocalia* Gray is thus restricted to its type species *esculenta* L. and also *marginata* and *troglodytes*.

Peters (1960) can be regarded as the base line for a discussion of the Hirundinidae. He recognized two subfamilies, the Pseudochelidoninae and the Hirundininae. Since he wrote, the Pseudochelidoninae has had a second species, *Pseudochelidon sirintarae* Thonglongya (1968) added to it. Having seen material of the type species, *P. eurystomima*, from the Congo and of *sirintarae* from Thailand I can see no reason to regard them as congeneric. *P. sirintarae* is, I believe, correctly placed in the Pseudochelidoninae despite our ignorance of its breeding habits. *P. eurystomima* nests in tunnels it makes in flattish sandbanks exposed by falling river levels. Thonglongya (1968) gives a number of distinctions between *sirintarae* and *eurystomima*. Among them he gives "bill more than half as wide again at gape, half as long again, and flatter; less marked ridge between the nasal apertures;". The differences in the shape and proportions of the bill and mouth show that they have very different feeding ecologies, *sirintarae* probably being able to take much larger prey and perhaps in different microhabitats. In view of the differences in morphology, ecology and zoogeographic region I propose:—

Eurochelidon, gen. nov.,

with type species *Pseudochelidon sirintarae* Thonglongya (1968) and no others known. *Eurochelidon* is feminine and derived from the Greek words *Euros*, the southeast wind, and *Chelidon*, a swallow.

For the old world Peters (1960) recognized in the Hirundininae *Cheramoeca* Cabanis 1850, *Pseudhirundo* Roberts 1922, *Riparia* Forster 1817, *Phedina* Bonaparte 1857, *Ptyonoprogne* Reichenbach 1850, *Hirundo* L. 1758, *Cecropis* Boie 1826, *Petrochelidon* Cabanis 1850, *Delichon* Horsfield & Moore 1854, *Psalidoprocne* Cabanis 1850.

Ptyonoprogne differs from *Hirundo* only in lacking dark metallic blue above. But there is little gloss or iridescence in the plumage of juveniles of *Hirundo* and its total loss in the predominantly arid country frequenting *Ptyonoprogne* is not of generic significance. Its mud pellet nest and manner of flight are indistinguishable from *Hirundo* and there is no good reason to separate them. Mayr & Bond (1943) retained it as a genus because they were arguing against the old view that it was part of *Riparia*.

By analogy with the swifts discussed above the case for maintaining

Pseudhirundo, *Cecropis* and *Petrochelidon* sunk in *Hirundo* by many modern writers is based on the correspondence of certain colour patterns and nesting habits. *Pseudhirundo* has a grey rump, the rest of the upperparts being the usual dark metallic blue, and builds its nest in holes in bare ground not made by itself but usually by rodents. *Cecropis* has a red rump and a deeply forked tail and normally builds an entrance tunnel to its mud pellet nests. *Petrochelidon* has a red rump and a virtually square tail and does not build an entrance tunnel to its mud pellet nests: some species are colonial breeders. All these genera differ significantly from *Hirundo* which has a rump concolorous with the back and builds an open half cup or cup shaped nest of mud pellets.

Pseudhirundo does not use mud at all in constructing its nests but uses pre-existing holes in the ground, which shows it to be a primitive swallow sensu Mayr & Bond (1943) and not at all closely related to *Hirundo*, *Cecropis*, *Petrochelidon* and *Delichon* which build nests of mud pellets, despite its possession of dark metallic blue upper parts. Peters (1960) should have placed *Psalidoprocne* somewhere before *Ptyonoprogne* in his list since it is also a primitive hole nesting species and kept all the recently evolved, mud pellet using genera at the end.

Pseudhirundo is probably not a monotypic genus. Williams (1966) described *Hirundo andrewi* (sic – it should have been *H. andreae* in terms of Appendix D 20 of the International Code of Zoological Nomenclature). It is described as more robust (whatever that means in this context) than *P. griseopyga* (Sundevall) and having smoky grey where the latter has white on the underparts and under wing coverts. *P. griseopyga* shows, as do many other old world swallows which are white below, some individual variation in the colour of the underparts, varying between white, pinkish white and pale grey. *P. andrewi* may be an extremely dark individual of *P. griseopyga* since it does not differ in pattern or measurements from *P. griseopyga* as one would expect a good species of swallow to do. C. W. Benson who saw the type of *P. andrewi* some years ago writes (*in litt.*) "I was quite unimpressed that it was a good species". Hall & Moreau (1970) place *P. andrewi* as a race of *P. griseopyga:* this is a possibility which does not appeal to me until it is shown to have a discrete breeding range.

Wolters (1971) has recently erected the genus *Phedinopsis* for *Phedina brazzae* Oustalet 1886. *P. brazzae* nests in tunnels in vertical sandbanks after the manner of *Riparia* (Chapin 1953) whereas *P. borbonica* (Gmelin 1789), the type of *Phedina* Bonaparte 1857, places its nest, a cup of vegetable matter without mud, in a sheltered niche in the rocks (Rand 1936: 428). The two species, *borbonica* and *brazzae*, apparently represent a prepleistocene radiation of swallows which has been largely suppressed by the more recently evolved, mud pellet using *Hirundo* and its relatives in the world continental areas leaving *borbonica* in Madagascar and the Mascarene Islands where no *Hirundo* or relative breeds and *brazzae* in a specialized niche in the lower Congo basin. In view of the fact that they are relicts of an ancient and doubtless once widespread stock and the difference in breeding habits and ecology I believe that recognition of *Phedinopsis* Wolters 1971 is warranted.

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An early record of a Blue-cheeked Bee-eater *Merops superciliosus* in the Isles of Scilly

by J. L. F. Parslow

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In June 1962, through the courtesy of Lt.-Commander T. M. Dorrien Smith, I was able to examine the unique collection of birds which was then housed at Tresco Abbey, Isles of Scilly. Virtually all the specimens had been collected in Scilly and among many British rarities was one specimen labelled as a 'Bee-eater' (*Merops apiaster*) which in fact proved to be an adult Blue-cheeked Bee-eater *Merops superciliosus*.

According to the Tresco Abbey record books, three bee-eaters had been killed at Scilly. Two of these were immatures, collected in September 1901 (*cf.* Clark 1906) and on 8th October 1906 (*cf.* Ogilvie-Grant 1906), and the third an adult, shot on 13th July 1921. It seemed likely that it was this last bird which was the Blue-cheeked Bee-eater, and a conversation I had with Mrs. Eleanor Dorrien Smith, widow of Major A. A. Dorrien Smith, who was responsible for building up the collection, showed this to be so.

According to Mrs. Dorrien Smith, it was Major Dorrien Smith's general policy that only one specimen of each species should be obtained for the collection. However, when an adult bee-eater was reported from St. Mary's in July 1921 he asked for it to be shot as the only specimens of *M. apiaster* in the collection were the two immatures. The bird was therefore killed and